“The relationship between credit policy and firms’ profitability: empirical evidence from Indian pharmaceutical sector”

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THE RELATIONSHIP BETWEEN CREDIT POLICY AND FIRMS' PROFITABILITY: EMPIRICAL EVIDENCE FROM INDIAN PHARMACEUTICAL SECTOR

Abstract

Credit policy plays a vital role in the operational efficiency of credit departments as it reduces the ambiguity of credit departments' functions by giving clear guidelines and instructions. It also reduces the loan default and speeds up accounts receivable turnover. This paper seeks to evaluate the effect of credit policy on the profitability of pharmaceutical firms listed on the Bombay Stock Exchange (BSE), using a balanced panel data of 82 pharmaceutical firms from 2008 to 2017. The number of days' collection period and the number of days' payable deferral period are chosen for measuring firms' credit policy, while return on assets (ROA) is used for measuring firms' profitability. It is found that the number of days' collection period and the number of days' payable deferral period have a negative and significant effect on the profitability of the pharmaceutical firms, while the control variables leverage, firm size, and age negatively impact the profitability of pharmaceutical firms. Financial managers in pharmaceutical companies should reduce the number of days' collection period and increase the number of days' deferral period to reduce the risk of bad debts. Furthermore, they should conduct a credit analysis to evaluate potential clients as it prevents bad debts.

Keywords credit policy, financial performance, receivables, payables

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INTRODUCTION

Receivables are not created when goods are sold on cash. It is created when sales are made on credit. In modern business, liquidity is considered a significant index. Moreover, it represents the major part of the current assets after inventories. Accounts receivable represent what the customers owe to the firm for the inventories that are sold to them on credit (Cooly & Roden, 1988). According to Hamption (1980), they represent accounts that came into being in the normal course of business for credit sales yet to be paid. Therefore, customers purchase goods and services from the company but do not pay promptly; payment is made at a later date.

Based on this understanding, accounts receivable are influenced by the policies a company sets for managing credits and the procedure designated for collecting them (Brigham & Ehrhardt, 2008; Moyer, McGuigan, Kretlow, & Nunez, 2005). These two factors also have an impact on inflows, bad debts, and sales (Hill & Sartoris, 1992). The credit period is the period within which payment for goods or services should be made. A cash discount is the percentage of the total charges that the stock owners overlook as a compliment given in reward for

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the early clearance of invoices. Nevertheless, discounts are always left to the firm's discretion, not necessarily a condition in all firms.

One of the direct finance sources is payable (Gitman, 2009; Hill & Sartoris, 1992; Moyer et al., 2005). Firms and their supplying channels should make arrangements regarding payment of credit, including the period a purchase on credit is to be paid back, the potential discounts, and the terms that are guaranteeing a timely repayment (Gitman, 2003; Moyer et al., 2005). The repayment of on-credit sales should be defined in terms of the maximum number of days. Discounts are defined in percentage terms as an incentive for early payment. If payment is made during the period of discounts, 2% is furnished to the firm making the payment. However, this condition is not always necessary as it is offered at the discretion of the suppliers.

When the credit standing of a customer is questioned due to incredulity in his trustworthiness or the potential of default to pay back credits, guarantees are stipulated. Such guarantees make up for the overdue accounts in cases of default. All these measures are subjected to mutual arrangements between suppliers and firms and their credit policies. There are no fixed standards therein. Moreover, if a firm fails to make payment within the period specified, extra costs are incurred on the firm. This, in turn, may destroy the firm's credit standing, impair the continuity of supplies, and forfeit prompt payment advantages, one of which is discounts (Brigham & Ehrhardt, 2008; Moyer et al., 2005).

Therefore, the main aim is to examine the effect of credit policy on the profitability of pharmaceutical firms. This objective was divided into two sub-objectives; firstly, to investigate the effect of accounts receivable on the profitability of Indian pharmaceutical firms, secondly, to analyze the effect of accounts payable on the profitability of pharmaceutical companies in the Indian context. The rest of this paper is divided into the following sections: section 1 reviews relevant literature, section 2 illustrates research methodology, section 3 demonstrates the results and interprets them, and final section concludes the paper.

1. LITERATURE REVIEW

Trade payables are considered to be essential sources of short-term funds for most corporations, whereas trade debt is one of the important policies that are used to increase profitability. Higher investment in trade credit is associated with better profitability (Martínez-Sola, García-Teruel, & Martínez-Solano, 2014). The impact of credit policy on firms' performance received dramatic attention in the literature. Numerous studies (e.g., Atandi & Wabwoba, 2013; Cheng & Pike, 2003; Denčić-Mihajlov, 2011; Ferrando & Mulier, 2013; Hill, Kelly, & Lockhart, 2012; Lin & Chou, 2015; Mbula, Memba, & Njeru, 2016; J. Niskanen & M. Niskanen, 2006; Saito & Bandeira, 2010; Tsuruta, 2015; W. Wu, Rui, & C. Wu, 2012; Yazdanfar & Öhman, 2016) investigated the impact of credit policy on firms' performance.

However, in the existing literature, Denčić-Mihajlov (2011), Hill et al. (2012), Mbula et al. (2016) sought to demonstrate the impact of accounts receivable management on the firms' performance in Kenya, Serbia, and Finland. Using econometric tests such as descriptive statistics, correlation, and regression model, it was found that accounts receivable correlate positively with firms' performance. Other studies (e.g., Ferrando & Mulier, 2013; J. Niskanen & M. Niskanen, 2006) identified the determinants of credit policy and its usefulness for the firms' growth. Their results proved that access to capital markets and creditworthiness were the key determinants of credit; it was also found that firms' growth positively correlates with the trade credit channel.

Despite the above, Atandi and Wabwoba (2013), Yazdanfar and Öhman (2016) aimed to empirically investigate the relationship between trade credit policy and firms' profitability. The results showed that trade credit negatively impacts firms' profitability; further, the availability of credit to SMEs did not necessarily lead to additional assets.

Likewise, Saito and Bandeira (2010) tried to explore the trade credit in the view of suppliers and buyers for a sample of 263 Brazilian listed companies. The results revealed that credit might be used as a sign of a firm's position and a method for facilitating access to bank loans. In an attempt to explore the aims behind trade credit, Cheng and Pike (2003) conducted his study on large companies in the UK. After analyzing the data, the researchers came up with seven motives behind trade credit: competitiveness, investment, pricing, financing, and weaker support for several other theoretical motives.

Similarly, other studies (e.g., Lin & Chou, 2015; Tsuruta, 2015) sought to evaluate the association between bank credit and trade credit in China and Japan. 1,213 Chinese companies and 80,625 Japanese firms were selected as a sample for the study. The findings demonstrated a positive correlation between bank loans and the supply of trade credit. Moreover, a significant negative relationship between accounts payable and bank loans was found. For exploring the association between trade credit and cash holding in China, Wu et al. (2012) set a goal to examine the correlation between cash holdings and trade credit of 1,626 Chinese listed firms. Financial data were extracted from the annual reports from 1999 to 2009. The results showed that trade receivables and payables have a different impact on cash holding. Furthermore, companies with high levels of financial deepening maintain less cash for payables while substituting more receivables for cash. The higher and developed financial sector helps companies better use trade credit as a short-term financing instrument.

It is still debatable whether accounts receivable impact firms' performance positively or negatively. Baños-Caballero, García-Teruel, and Martínez-Solano (2010), Vahid, Elham, Mohsen, Khosroshahi, and Mohammadreza (2012) empirically advocated that accounts receivable significantly affect firms' performance. Similarly, Martínez-Sola, García-Teruel, and Martínez-Solano (2014) argued that accounts receivable has a positive effect on firms' performance. On the one hand, Tran, Abbott, and Yap (2017), Ukaegbu (2014), Vahid et al. (2012) asserted that firms' performance is negatively affected by accounts receivable. One the other hand, Baños-Caballero et al. (2010), Deloof (2003), Lazaridis and Tryfonidis (2006), Padachi (2006) affirmed that accounts payable deferral period is negatively associated with firms' performance. Consistently, Tran et al. (2017), Ukaegbu (2014), Vahid et al. (2012) believed that the accounts deferral period has a negative correlation with firms' profitability. On the contrary, Kung'u (2015), Anil (2015), Waema and Nasieku (2009) advocated that the accounts payable period has a positive impact on firms' performance.

The debate over whether the large or small accounts receivable and accounts payable enhanced firms' performance motivated the researchers to conduct this research in the pharmaceutical industry. As per the researchers' knowledge, which is based on previous research, the study found that credit policy and its effect on firms' performance have not been investigated yet in the Indian context. The study used advanced statistical software and robust statistical tools to ensure robust results. Moreover, the conflicting results in the existing literature warrant the need for more research to be done in the field of credit policy.

2. METHODS

The review of previous studies has provided us the basic theory on credit policy and its impact on firms' profitability and how it should be measured and analyzed. Data were gathered from various sources using journals, books, and annual reports. Financial data are extracted from the Prowess IQ database.

One hundred fifty-three (153) pharmaceutical firms are listed on BSE due to some reasons; for example, some companies did not have financial data for the study period, some firms were established after 2011, some companies' financial data contain extreme outliers. Thus, the study sample consists of 82 pharmaceutical firms. There are two variables: credit policy is the independent variable, and return on assets is the dependent variable. A panel regression technique is used to examine the impact of credit policy (independent variable) on firms' financial performance (dependent variable) of Indian pharmaceutical companies listed on BSE.

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The present study uses a balanced panel data of 82 firms from 2008 to 2017, generating 8,200 firm-year observations. Hsiao (2003) and Baltagi, Bratberg, and Holmås (2005) believe that several advantages are behind the usage of panel data. One of those benefits is that it produces efficient econometric estimates better than those produced by pure time-series or pure cross-sectional data techniques. Similarly, Kyereboah-Coleman (2007) advocated that panel data control individual heterogeneity and multicollinearity. Therefore, panel data of 82 firms for ten years are used to analyze the effect of credit policy on the profitability of pharmaceutical companies. Based on this background, fixed and random effects linear regression models are used for getting more comparable and consistent estimates.

Based on the above discussion, and following (Chowdhury & Rasid, 2017; Anbar & Alper, 2011; Masood & Ashraf, 2012) in the formulation of the panel data model, the structure of the panel data for the present study is formulated as follows:

$$\gamma_{nt} = \alpha + \beta x_{nt} + \varepsilon_{nt}, \quad (1)$$

where γ_{nt} stands for the dependent variable (return on assets), α is the intercept, k, while β is a $k \cdot 1$ vector of parameter to be estimated, and x_{nt} stands for vector of observations, which is $1 \cdot k$, $t = 1, \ldots, T$, $n = 1, \ldots, N$ the practical and operational form. The above equation can be explained clearly by the following regression models:

$$(ROA)_{it} = \alpha + \beta_1 (NCP)_{it} + \beta_2 (Size)_{it} + \\ + \beta_3 (LEV)_{it} + \beta_4 (AGE)_{it} + \varepsilon_{it}, \quad (2)$$

$$(ROA)_{it} = \alpha + \beta_1 (NPP)_{it} + \beta_2 (Size)_{it} + \\ + \beta_3 (LEV)_{it} + \beta_4 (AGE)_{it} + \varepsilon_{it}, \quad (3)$$

where $(ROA)_{it}$ stands for firms' profitability, $(NCP)_{it}$ – number of days' collection period of a firm, $(NPP)_{it}$ – number of days' deferral period, $(Size)_{it}$ – size of firms, $(LEV)_{it}$ – leverage of firms, $(AGE)_{it}$ – age of firms, α – common *y*-intercept, β_1-β_4 – explanatory variables' coefficients, ε_{it} – stochastic error term of the company.

3. RESULTS

3.1. Descriptive statistics

Table 2 reveals the central tendency of all variables used in the study, which are discussed as follows:

- Return on assets

The mean value of return on assets for the overall sample ranges between –50.90 and 92.64, with a

Table 1. Variables description

Proxy	Symbol	Formula	Existing studies
Return on assets	ROA	Net income / total assets	Berg (2016), Niresh (2012), Tauringana and Afrifa (2013), Ukaegbu (2014), Garcia-Teruel and Martinez-Solano (2007)
Number of days' collection period	NCP	Accounts receivables × 365 days / sales	Abuzayed (2012), Garcia-Teruel and Martinez-Solano (2007), Mehta (2017), Pais and Gama (2015), Tahir and Anuar (2015), Tauringana and Afrifa (2013), Raheman., Afza, Qayyum., and Bodla (2010), Vahid et al. (2012), Yunos, Nazaruddin, Ghapar, Ahmad, and Zakaria (2015), Deloof (2003)
Number of days' payable deferral period	NPP	Accounts payable ×365 days / cost of sales	Abuzayed (2012), Garcia-Teruel and Martinez-Solano (2007), Raheman et al. (2010), Tauringana and Afrifa (2013), Vahid et al. (2012), Yunos et al. (2015), Deloof (2003), Pais and Gama (2015), Tahir and Anuar (2015)
Log of total assets	Size	Natural logarithm of total assets	Abuzayed (2012), Afrifa (2016), Banos-Caballero, Garcia-Teruel, and Martinez-Solano (2012), Deloof (2003), Mehta (2017), Pais and Gama (2015), Tahir and Anuar (2015), Tauringana and Afrifa (2013), Tran et al. (2017), Ukaegbu (2014), Vahid et al. (2012), Yunos et al. (2015), Afrifa and Padachi (2016)
Leverage	LEV	Total debt / shareholder's equity	Abuzayed (2012), Afrifa (2016), Afrifa and Padachi (2016), Deloof (2003), Garcia-Teruel and Martinez-Solano (2007), Mehta (2017), Tauringana and Afrifa (2013), Bagchi, Chakrabarti, and Roy (2012), Banos-Caballero et al. (2012), Tahir and Anuar (2015), Tran et al. (2017), Ukaegbu (2014), Vahid et al. (2012), Yunos et al. (2015)
Firm's age	AGE	Number of years the company has been operating	Afrifa (2016), Afrifa and Padachi (2016)

Table 2. Descriptive statistics

Variables	Variable name	Mean	Median	Maximum	Minimum	Std. dev.
Dependent variable	ROA	6.10	5.90	92.64	-50.90	9.15
Independent variables	NCP	100.90	88.15	556.40	7.80	60.32
	NPP	86.52	76.75	462.00	7.42	56.99
Control variables	Size	8.26	8.20	12.87	3.68	1.86
	LEV	1.94	0.45	104.60	0.00	9.36
	AGE	33.28	28.00	110.00	1	18.82

standard deviation of 9.15. Pharmaceutical companies in the study sample achieve an average return on assets of 6.10, which indicates that the majority of listed pharmaceutical companies are profitable.

- Number of days' collection period

Pharmaceutical companies receive the payment of their credit sales from their clients after 100.90 days on average. In other words, pharmaceutical companies collect their money from the market after three months. The maximum period taking by pharmaceutical companies to collect the payment of credit sales is 556.4 days, while the minimum time required is 7.8 days, with a standard deviation of 60.32. This means that there is a small deviation in the accounts receivable period between the companies.

- Number of days' deferral period

The average number of days' deferral period is 86.52, which means that pharmaceutical companies wait for 86.52 days to pay back the suppliers. The minimum and the maximum number of days' pharmaceutical companies wait to pay their purchases are 462 and 7.42, respectively. Pharmaceutical firms take, on average, three months to pay back their suppliers; this period is quite similar to the number of days that pharmaceutical companies take to collect their cash from their clients.

- Firm size

Size of firms was measured by log of total assets. The average of log total assets is 8.26, and the minimum and maximum values range between 3.68 and 12.87, with a standard deviation of 1.86. The standard deviation exhibits a small variation in the size of the pharmaceutical companies listed on BSE.

- Leverage

The mean of leverage ratio for pharmaceutical companies is 1.94 percent, the minimum and maximum leverage values range between 0.00 and 104.60, with a standard deviation of 9.36. The standard deviation is large, which indicates a large variation in the financial leverage used by pharmaceutical companies; this illustrates that most pharmaceutical companies do not use debt to finance their business. This is understandable, as all pharmaceutical companies in the sample are listed on BSE, which allows firms to go for unlimited access to equity capital.

- Firm's age

Firm's age ranges between 1 and 110 years, with an average of 33.28 years, with a standard deviation of 18.82. The average age of 33 years could be the reason why the firms within the sample are profitable. The standard deviation of firms in the sample is 18.82, which indicates the small variation in the age of the companies.

3.2. Correlation matrix

Findings in Table 3 show a negative association between return on assets and cash collection period; this result is statistically significant at 1% level of significance. This result indicates that when the number of days' collection period increases, the profitability of pharmaceutical firms decreases. This result is in line with previous research work in the field of working capital management, e.g., Padachi (2006), Tauringana and Afrifa (2013) who found a negative relationship between cash collection period and firms' profitability. It also contradicts some other studies (e.g., Martínez-Sola et al., 20014; Mushtaq, Chishti, Kanwal, & Saeed, 2015; Singhania, Sharma, & Rohit, 2014). Similarly, the number of days' deferral period in pharmaceu-

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Table 3. Correlation matrix

	ROA	NCP	NPP	NIHP	Size	LEV	AGE
ROA	1	–	–	–	–	–	–
NCP	–.273**	1	–	–	–	–	–
NPP	–.222**	.458**	1	–	–	–	–
Size	.116**	.034	–.125**	.063	1	–	–
LEV	–.107**	.370**	.506**	.330**	–.139**	1	–
AGE	.129**	–.066	–.290**	.221**	.292**	–.065	1

Note: ROA – return on assets, NCP – number of days' collection period of company, NPP – number of days' deferral period, SIZ – Size of company, LEV – Leverage of company, AGE – age of the firm. **. Correlation is significant at the 0.01 level. *. Correlation is significant at the 0.05 level.

tical companies negatively correlates with return on assets. This result means that pharmaceutical companies wait longer to pay their suppliers. The findings from some other studies conducted in different developing and developed countries are inconsistent with the findings of this study (e.g., Pais & Gama, 2015; Padachi, 2006; Sharma & Kumar, 2011; Singhania et al., 2014; Tauringana & Afrifa, 2013). At the same time, many studies have found a positive relationship between the number of days' deferral period and return on assets (e.g., Mahato & Jagannathan, 2016; Mushtaq et al., 2015; Tahir & Anuar, 2015).

Regarding control variables, Table 3 reveals that firm size and firm's age positively and significantly relate with firms' profitability. Some researchers support these results (e.g., Garcia-Teruel & Martınez-Solano, 2007; Tahir & Anuar, 2015; Tauringana & Afrifa, 2013), while some other studies contradict with the results of this study (e.g., Pais & Gama, 2015; Yunos, Nazaruddin, Ghapar, Ahmad, & Zakaria, 2015). Leverage is one of the control variables used in this study; it was found that return on assets negatively and significantly correlates with leverage, this goes in line with the results found b Garcia-Teruel and Martınez-Solano (2007), Yunos et al. (2015). On the other hand, some studies argue that there is a positive relationship between leverage and return on assets (e.g., Afrifa & Padachi, 2016; Pais & Gama, 2015). Finally, the results in Table 3 reveal that return on assets is negatively and significantly associated with independent board directors at 5% of significance.

3.3. Regression models and its diagnostic tests

To choose the appropriate model, pooled model or panel model (fixed and random), redundant fixed effects likelihood ratio was performed. The findings in Table 4 show that the pooled models are invalid because of cross-sectional effect. The results also show that the model has one-way variable intercept effect because cross-section fixed effect for all models is significant ($p < 0.05$), while period fixed effect is insignificant ($p > 0.05$). Thus, the study is heading towards panel model with one-way variable intercept effect. Subsequently, Hausman test is used to decide which model is appropriate, whether one-way fixed or random effects model. The null hypothesis of Hausman test states that random effect is appropriate. The results in Table 4 indicates the rejection of the null hypothesis ($p<0.05$). Therefore, the alternative hypothesis is accepted, which means fixed effect model should be used.

Multicollinearity test is highly advisable by many statisticians before running the regression model (Hair, Black, Babin, & Andersen, 2010). Initially, multicollinearity is checked by running the correlation matrix; it is obvious from Table 3 that there is no multicollinearity among the dependent variables.

For a deeper investigation of multicollinearity presence in the regression models, the Variance Inflation Factor (VIF) test is a useful tool for that (Wester, Borders, Boul, & Horton, 2013). If a VIF value of any independent variable is greater or equal to 10, it means that multicollinearity in the model is high (Field, 2009). The multicollinearity test results in Table 5 guarantee the absence of multicollinearity issue in all models as long as VIF values are far below the critical value 10. Another key assumption of multiple regressions is the absence of heteroscedasticity in the model, which means that

Table 4. Panel diagnostic tests

M	Redundant fixed effects tests						Hausman test		Models
	Cross-section fixed effects test			Period fixed effects test					
	Effects test	Statistic	Prob.	Effects test	Statistic	Prob.	Test summary	Prob.	
1	Cross-section F	6.38	0	Period F	1.5025	0.14	Cross-section random	0.0137	Fixed
	Cross-section Chi-square	437.21	0	Period Chi-square	13.643	0.13			
2	Cross-section F	7.498	0	Period F	1.2124	0.28	Cross-section random	0.0013	Fixed
	Cross-section Chi-square	494.39	0	Period Chi-square	11.027	0.27			

Table 5. Heteroscedasticity and multicollinearity tests

Heteroscedasticity White's test				Multicollinearity test			
Model (1)				Model (1)		Model (2)	
F-statistic	0.88	Prob.	0.58	Variable	VIF	Variable	Variable
Obs**R*-squared	12.38	Prob.	0.58	NCP	1.175	NCP	1.477
Model (2)				Size	1.124	Size	1.111
F-statistic	1.01	Prob.	0.44	LEVE	1.190	LEVE	1.377
Obs**R*-squared	14.17	Prob.	0.44	Age	1.100	Age	1.197

the variation in the residuals is the same over time (Garson, 2012). The null hypothesis of this test states that there is no heteroscedasticity in the model. Thus, if the *p*-value is less than 0.05, the null hypothesis is rejected, and vice versa. It is evident from Table 5 that the *p*-value of White's test is greater than 0.05 for all models, which means the null hypothesis is accepted, confirming the homogeneity of the data. Therefore, the assumption of homogeneity is met.

4. DISCUSSION

4.1. Impact of the number of days' deferral period on the profitability of Indian pharmaceutical firms

Model 1 in Table 6 represents the impact of the number of days' collection period on the return on assets of pharmaceutical firms. The results of fixed effect model show that the R^2 and adjusted R^2 are fairly good, R^2 is 0.47, which means that 0.47 of the variation in return on assets of pharmaceutical companies is attributable jointly by the number of days' collection period, leverage, firm's age and size. In contrast, the rest of variation is attributed to other variables, which are not included in this study.

It is clear from Table 6 that the number of days' collection period negatively affects return on assets, with a coefficient of –0.031. This result is supported by Afrifa (2013), Berg (2016), Garcia-Teruel and Martınez-Solano (2007), Makau, AA, and Stephen (2014), Pais and Gama (2015), Şamiloğlu and Akgün (2010), Sen and Oruç (2009), Sharma and Kumar (2011), Tahir and Anuar (2015), Waema and Nasieku (2009), Yunos et al. (2015) who argue that accounts receivable negative impacts firms profitability. This indicates that when the number of days' collection period increases, return on assets of pharmaceutical firms decreases. These results contradict Martínez-Sola et al. (2014), Mushtaq et al. (2015), Rahman (2011), Sharma and Kumar (2011), Singhania et al. (2014).

The magnitude of the coefficient shows that when the number of days' collection period increases by one day, return on assets decreases by 0.03 percent. There are many reasons behind the negative impact of the number of days on the financial performance of pharmaceutical companies listed on BSE. Firstly, shortening the number of days collection period will eliminate bad debts (Banos-Caballero et al., 2012), which might help companies to enhance their return on assets. Secondly, reducing the accounts receivable collection period means that a small amount of funds will be lifted in the hand of customers, which reduces the chances of default payment. Furthermore, the reduction in the receivables collection period means that companies are getting their money from the

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Table 6. Regression fixed effects model

Model 1				Model 2			
Variables	**Coefficient**	***t*-statistic**	**pv**	**Variables**	**Coefficient**	***t*-statistic**	**pv**
NCP	–0.031	–5.328	0.000	NPP	–0.057	–7.151	0.000
Size	–0.062	–0.071	0.944	Size	0.139	0.161	0.872
LEV	–0.376	–2.402	0.017	LEV	–0.450	–2.939	0.003
Age	–0.123	–0.968	0.333	Age	–0.127	–1.017	0.309
C	14.648	2.955	0.003	C	15.098	3.091	0.002
***R*-squared**		0.470		***R*-squared**		0.485	
Adjusted ***R*-squared**		0.409		Adjusted ***R*-squared**		0.426	
***F*-statistic**		–2718.027		***F*-statistic**		8.142	
Prob(***F*-statistic**)		0.000		Prob (***F*-statistic**)		0.000	

customers on time, which enables them to get an early payment discount and also exploit some choices, if any, which also would impact the return on assets.

4.2. Impact of the number of days' deferral period on the profitability of Indian pharmaceutical firms

The results of model 2 in Table 6 show the impact of the number of days' deferral period on the profitability of pharmaceutical firms listed on BSE. The findings of fixed effect regression model revealed that the explanatory power of the model represented by R^2 and adjusted R^2 are 0.48 and 0.42, respectively, which indicate the fitness of the model. They also mean that the number of days' deferral period, leverage, firm size and age explain 0.48 of the variation in return on assets of pharmaceutical companies listed on BSE. The coefficient of the number of days' deferral period is (–0.057), which means that the number of days' deferral period negatively and significantly impacts return on assets at 1% level of significance.

These results are supported by Pais and Gama (2015), Padachi (2006), Sharma and Kumar (2011), Singhania et al. (2014), Tauringana and Afrifa (2013) who believe that the number of days' deferral period negatively and significantly impacts return on assets. The coefficient (–0.057) means when the number of days' deferral period is reduced by one day, return on assets increases by 0.057. On the other hand, some other studies contradict the results of this study (e.g., Pais & Gama, 2015; Yunos et al., 2015).

These findings suggest that when pharmaceutical companies listed on BSE follow a strategy of early payment of their credit purchases of goods and services, they enhance their return on assets. The negative impact of the number of days' deferral period on return on assets might be due to the following reasons: firstly, pharmaceutical companies are paying their dues on time and enjoying the discount of early payment. Secondly, making an early payment to the suppliers would post the business relations between the company and the suppliers, which ensure continuous business deals and enough supply at the time of shortages.

CONCLUSION

The article aimed to evaluate the effect of credit policy on the profitability of pharmaceutical companies. It was found that the majority of listed pharmaceutical firms in India are profitable. Further, pharmaceutical companies take almost 100 days to collect their cash from customers, and they wait around 86 days to pay back their suppliers. Moreover, 0.47 of the variation in return on assets of pharmaceutical companies is attributable jointly by the number of days' collection period, leverage, and firm's age and size. It was found that the number of days' collection period negatively impacts return on assets. It was found that the number of days' deferral period, leverage, firm size and age explain 0.48 of the variation in return on assets of pharmaceutical firms listed on the BSE. Pharmaceutical companies are recommended to strengthen the relationship with their customers, which will bring many benefits such as a better understanding of customers' requirements, especially those are related to credit policy, which leads to avoiding bad debt and stimulate sales. Furthermore, pharmaceutical companies are encouraged to continue making payments to their suppliers early to enjoy the discount rate, which can be used as a source of short-term finance.

AUTHOR CONTRIBUTIONS

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